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TITLE: Real-time image enhancement
techniques

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Detailed Description Text - DETX (12):
   With reference to FIGS. 2 and 3, specific
calculations for vupper and vlower
may be performed by developing an intensity value
histogram for the image to be
enhanced. Such an histogram divides the range of
intensity values present in a
given image, i.e., the range from vmin and vmax,
into a plurality of
sub-ranges. For each of the plurality of
sub-ranges, the number of pixels in
the image having intensity values in this sub-range
is determined. The first
moment of the **histogram** may be conceptualized as
the **"center of gravity" of the**
histogram. The "center of gravity, i.e. the first

moment, may be calculated by
using the formula ##EQU1## where I.sub.i represents
a specific intensity level,
h.sub.i is the number of pixels having intensity
level I.sub.i, and N is the
total number of intensity levels (sub-ranges). For
example, intensity level
301 (FIG. 3) may be conceptualized as representing
intensity level one
(I.sub.1), intensity level 303 may be
conceptualized as representing intensity
level two (I.sub.2), and intensity level 319 may be
conceptualized as
representing intensity level ten (I.sub.10). In
this example, there are ten
intensity levels (i.e., ten sub-ranges), so N is
equal to 10.

Claims Text - CLTX (11):
    (i) developing a luminance value histogram for
the image to be enhanced by
dividing the range from vmin and vmax into a
plurality of sub-ranges such that,
for each of the plurality of sub-ranges, the number
of pixels in the image
having luminance values in this sub-range is
calculated; the **center of gravity**
of the luminance value **histogram** being defined as
the first moment and being
indicative as to the relative over- or
under-exposure of the image, such that
the first moment is relatively closer to vmin than
to vmax for an underexposed
image and relatively closer to vmax than to vmin
for an overexposed image; and